reckoned a much better material for sleepers than teak), *Terminalia tomentosa*, *T. paniculata* (both excellent timber species), *T. chebula* (a good timber-tree, besides yielding the myrobollam of commerce). This seedling-growth is a very satisfactory feature in the regeneration of these fuel-forests. It should ensure their permanence and improvement, and may perhaps be ascribed to fairly-good protection from cattle-trespass. At present the sustained yield of the area, referred to, is about 50,000 tons of 68 cubic feet each, but when it is fully stocked, the yield will be very much greater.

(2).—By Coppice.

107. There is nothing to add, under this head, to what has been written in former reports. Coppice-growth is satisfactory except in comparatively few cases in which the soil, or the stools, have become exhausted.

(2).—Artificial Regeneration.

108. The dibbling-in of seeds of the better kinds of tree and the planting, out of seedlings under a certain amount of shade, appear to be the best and cheapest modes of artificially regenerating and improving the jardinaged forests of Kanara. Regular plantations there, or in the poorer jungles of the Circle are rarely completely successful and always very expensive, and the attention of the Department is, therefore, directed to periodical closures in the first place, and, secondly, to the supplementing of natural growth by the dibbling-in of seeds, and by the planting of superior species under cover of the advance-growth. In the more populous parts of the Circle, the difficulty of complete closure is one of the principal obstacles to be overcome, and, with a view to make it more effective, it is proposed, as already observed, to resort to barbed wire-fences, and a quantity has been budgetted for in the estimates for 1896-97.

109. Experiments made above and below the ghâts show that planted seedlings of teak and other valuable species are quite able to establish themselves without aid if provided with a moderate amount of shade. Ample evidence of the truth of this assertion exists, for example, in the forests of Katgal below the ghâts, and in those of Birchi above the ghâts; but teak-seedlings planted out in regular plantations, in the open, require to be watered for one or two seasons, and even then do not seem to thrive. These considerations have led to regular plantations being looked upon with disfavour.

Northern Division of Kanara.

110. *In the Halyál-range*, 6,500 teak-seedlings were planted in the forests in bamboo-tubes.

111. *In the Súpá-range*, 3,300 were put out, and, of those planted last season, 1,500 are reported to be flourishing.

112. In the Karwar-range, 1,700 teak-seedlings were put down. Of the previous season's crop, 1,200 teak and 900 *hardas* are reported to be doing well.

Central Division of Kanara.

113. *Yellápúr-range.*—A regular plantation in the Wantmane-jungle proved a failure and was abandoned.

114. The number of young plants put out in plantations was 3,955.

115. The number of young plants surviving in *plantations* was 13,927, against 13,659 in 1893-94.

116. *Ankola-range.*—3,950 seedlings were put out in plantations, and the number of young plants surviving in plantations, was 27,825, against 26,472 in 1893-94.

117. *Mundgod-range.*—4,174 teak-seedlings were put down in the Hulihond-plantation. At the end of the year, 5,114 young plants survived in the plantation. Much damage was done by a fire that swept over this plantation, but it is hoped that the burnt seedlings will shoot up, as some have already sprouted again.

118. Besides the above additions to regular plantations, 16,714 plants were planted in suitable places in the forests of the Central Division; and seeds were dibbled in on 44,386 patches and 33 bag-fuls were sown broadcast.

Southern Division of Kanara.

119. 1,100 plants were put down, from a nursery, in the forest of Katgal, and were looking well at the end of the season.

Belgaum Division.

120. 956 plants of blackwood, *hone* (Pterocarpus marsupium) and *matti* (Terminalia tomentosa) were put down in the fenced portion of the Hemadge-forest, and, of these, 715 survive.

121. 108 seeds of *Swietenia macrophylla*, received from Mr. Gleadow, were sown: 50 have germinated.

Kolábá: Ratnágiri.

122. 7,302 plants, chiefly casuarina, were put down from nurseries in the Dápóli plantation, and 9 *khandis* of seed were sown broadcast in the forest.

Bijápúr.

123. 37 maunds of *ním*-seed, 12 of *Chloroxylon swietenia* and 6 seers of sandal were collected and sown.

(3).—Early Thinnings.

124. 123 acres of the Karwar casuarina-plantation were thinned.

125. 172 square miles of forest in the Halyál-range were thinned, and 25 square miles in Súpá.

126. 648 acres in the Hunshettikóp-jungle of the Yellápúr-range were thinned.

127. 4,000 acres of forest were thinned in the Khánápúr-range of the Belgaum Division.

(4).—Other Operations for the Improvement of the Forest.

128. In Kolábá, inferior species on 4,200 acres were girdled to death.

129. Similar operations were carried out in Belgaum (4,000 acres): in the Yellápúr-range (200 acres): in Súpá-range (1,200 acres): in Karwar-range (1,000 acres).

130. Forest guards were also employed in cutting down creepers and other vegetation that interfered with the growth of superior species.

(5).—Experiments.

131. A small quantity of seed of *Swietenia macrophylla* was sown in the Yellápúr-range, and 94 seedlings were raised and transplanted, but died in the course of the year.

132. In the Belgaum-range, 50 seedlings of this species were grown.

CHAPTER III.

GROSS YIELD AND OUTTURN OF FOREST PRODUCE.

NORTHERN, CENTRAL AND SOUTHERN DIVISIONS OF KANARA.

133. The large teak exploited, yielded 404,129 cubic feet against 371,216 cubic feet in 1893-94; and small teak, such as poles, rafters, &c., aggregated 58,610 cubic feet against 28,018 cubic feet.

134. The large jungle-wood removed, fell, from 336,605 cubic feet in 1893-94, to 322,265 cubic feet in 1894-95, and small jungle-wood, from 20,298, to 11,393 cubic feet. The quantity of large black-wood exploited also fell, from 30,205, to 18,055 cubic feet.

135. The increase in the yield of large teak, occurs chiefly in the Northern Division of Kanara, where contractors brought in wood (about 70,000 cubic feet) which was due in the previous year. On the other hand, the Central Division of Kanara shows a decrease of about 39,000 cubic feet, because wood for the Kódibág-depôt arrived too late to be accounted for in 1894-95.

136. There was a good demand for teak-poles, and, therefore, the clearing-off of teak in occupied lands was accelerated.

137. In 1893-94 the demand for *matti* (Terminalia tomentosa) and black-wood was abnormally great, and to this circumstance is due the decrease in the quantity of jungle-and black-wood exploited during 1894-95.

138. The demand for bamboos continued to be good, the number of stems extracted rising, from 3,707,493, to 4,386,358.

139. The crop of myrobollams was very poor, the quantity collected being 2,312 khandis against 4,479 in 1893-94.

140. The firewood exploited, increased, from 1,211,623 cubic feet, to 3,142,352. The increase is common to all three divisions of Kánara, but occurs chiefly in Northern and Southern Kanara; about 356,000 cubic feet more than the quantity removed in 1893-94 were